

Field experiments for designing controlled CO₂ release and leakage detection monitoring in a shallow aquifer of K-COSEM site, Korea

K-COSEM site

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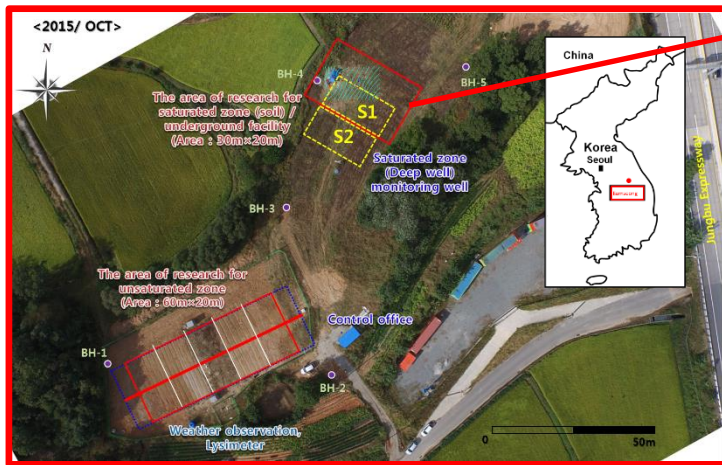
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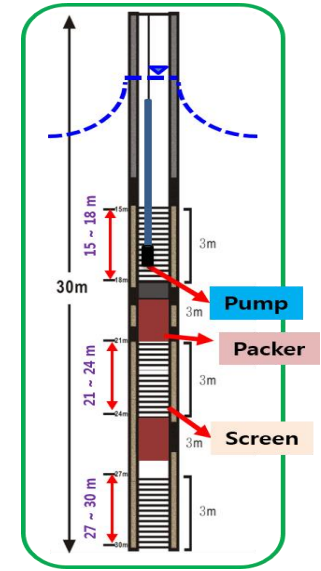
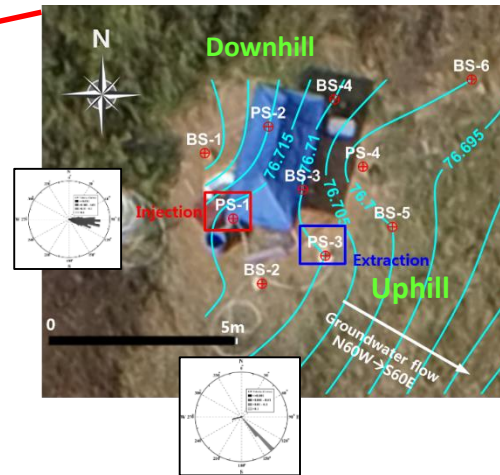
Hydrogeological Characterization

- Location : **EIT (Environment Impact evaluation Test facility on seepage of geologically stored CO₂) site**, Eumseong, Korea
- The study site was constructed to perform hydraulic characterization and shallow-depth groundwater monitoring for **evaluation of environmental impacts caused by CO₂ storage and leakage**
- The study site is composed of two zones depending on specific research purpose

(1. Unsaturated zone; 2. Saturated zone)



[Distribution of water level]

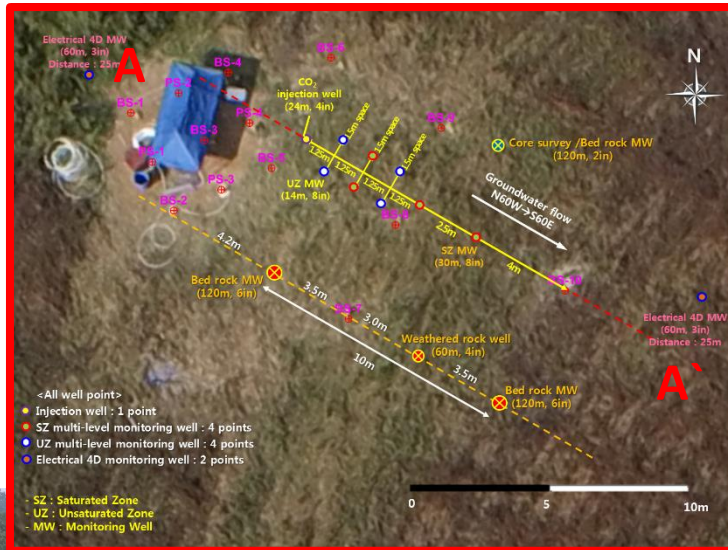


- Hydrogeological properties obtained from hydraulic tests (Pumping test, slug test and falling head permeability test)
- Hydraulic conductivity : $4.75 \times 10^{-5} \sim 8.33 \times 10^{-4}$ cm/sec

- Hydraulic gradient : 0.01
- Electromagnetic flowmeter test Groundwater flow : N60W → S60E flow from downhill to uphill

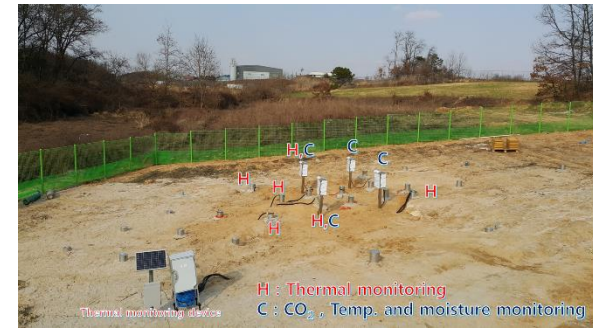


[Groundwater and gas monitoring network]



**Saturated zone
CO₂ monitoring site**

EIT site, Eumseong, Korea



[Well installation at shallow depth zones for CO₂ injection and leak test, vertical cross-section]

CO₂-infused water and gaseous CO₂

